

Title:

How can the VDR prevent accidents and improve the Safety of a vessel ?

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Keywords

Marine

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Ladies and Gentlemen,

This paper will present how easy it is to retrieve the information from a shipborne VDR, using the desktop at your office.

You can review *real events* that is recorded and stored on board a vessel.

First, and for all of us the most important information - the radar images- as displayed on the bridge.

Secondly - and as important - you can listen to the communication on the bridge and over the comsystems.

Listening to discussions, orders and radiocom could clarify the handling of the ship at the time.

And - all the important data, as position, course, speed, main alarms ... as presented on the bridge.

All information recorded is time-synchronized for obvious reasons.

Please, give this idea a thought - what can we learn from all accidents/incidents ?

And as important - what what can we learn from successful ship handling ?

How can the VDR prevent accidents and improve the Safety of a vessel ?

Let's start with one important definition -

It says in the **IMO A.861(20)** - which is the Performance Standards for Shipborne VDRs - Information contained in a VDR should be made available to both the Administration and the shipowner. This information is for use during any subsequent investigation to identify the causes of the incident.

The key-question is access to the information.

Appreciating that, let's have a look at the technical features, is it possible to retrieve this information at the offices ?

Yes - daily use of real events can be done by use of your desktop, as the computers that we are using here today.

You need a multimedia equipped computer, loudspeakers and a large monitor, at least 19, or maybe even better - use two large monitors.

We are looking at a computer that could be purchased from all major suppliers, and the prices are approx. USD 3500 or better.

If you have a Windows operating system and the special software package which is available with a VDR - then you should be set.

Utilizing a Windows Menu and Browser should provide an easy to use handling.

Let's appreciate that - if this is going to happen, it has to be an easy handling.

Preferably you will dedicate one exclusive computer for this purpose, required software packages are installed and it's ready for an immediate use.

We don't know when next incident comes up.

But, and this is important - in order to access the recorded information very easy, it might be an idea to include the capability to use your desktop computer.

Understanding that improved reviewing could be achieved by use of the dedicated computers, especially designed for the purpose.

The data is transferred from the vessel, using magnetical or optical disks, tapes, or on line using a secure network.

Again it's vital that it's easy to transfer the information for obvious reasons, and in the same time ensuring that the security is fulfilled.

Security - What about access ?

Who should have access to the information, on board and at the offices ?

This question has already been targeted and it's appreciated that this must be very clear and understood by the Officers and the Management.

Let's appreciate it once again - this is a very sensitive question, which has been discussed all around the world intensively already today. This possibility has to be a positive option to the Officers on the bridge, if you are going to succeed using the information stored to improve the safety.

So again - access is the key-question.

How to use this information ?

Now as we can retrieve the information at the desktop, the most important issue is how to use all this most important and most valuable information to improve safety and quality on board the vessel.

We are looking at a lot of information, and the question is how to select and get a good understanding of the situation on the vessel.

If we are looking for information from an accident or incident, that's easy to decide - we are looking for all information for the time leading up to the event.

But when we are looking for information to improve ship's handling it's not that easy. Either make a spot check, select a time, an operating area or a harbor, and start reviewing. Or ask the Captain to select the information for you. And please remember that we have to appreciate the IMO wording re this access.

Successful ship handling, again it's easier. The Officers on watch selects the period to review in order to present how they managed and handled the ship. Here is also the access not that sensitive as the Officers most likely are happy to present how they succeeded.

One example, radar images

Let's have a look at a few radar images - image by image, and when we are adding the audio files with the communication, together with all the data files, minute by minute ... maybe it's easier now to understand that we have to be very restrictive handling this important information.

I hope that you can foresee the huge amount of data that's stored even only looking at a few minutes, and by that appreciate my statement. And also that we are now finally looking at the possibility of using real events from the voyages with our own ships, in the safety training.

Technically it can be done - the key-question is related to access and selection of the data to be retrieved.

The most important target is to improve safety handling of the vessels.
Now when we have developed new tools to improve safety training, it's very much up to ourselves to discuss, decide and begin to use these in our safety efforts.

Sum-up - we can retrieve information stored in a VDR, using our own desktop.
And when we are going to retrieve the information for investigational purposes, radar could be reviewed using the high resolution, provided that we have advanced computers with a high resolution capability.

That about the operational use of this most valuable information.

Now, let's focus onto the high-tech use of all this information.

Imagine, that you are participating in a safety training, using a Bridge Simulator.
The session starts with real events, displayed on the screen in front of you, as you remember them from one of your recent voyages.

The Radar images are retrieved from this very voyage, coordinated with all the navigation and safety information, as recorded.

And suddenly the Training officer takes over and the scenario changes.

It's all based on the real events - what can be achieved during a training session including the use of real events ?

I think it's obvious - this training will be far more realistic and by that improve safety handling of the ship.

Bridge Simulation Training is expensive - here is a tool that can give us much more value for money.

This is what's about to happen in Port Klang, at Star Cruises HQ, using their new Bridge Safety Training Center.

First - use the Full scale Bridge Simulator to review information leading up to an incident - what could be achieved when the Officers are reviewing this ?

(And they have experienced too many incidents, or better claims, in the Malacca Straights)

You can recognize main alarms as displayed on the bridge, while you were on watch.

We do think that this Training now will become even more realistic, and we are going to reach new dimensions, using the latest multimedia technology - all to improve safety handling of vessels.

Conclusion, can the VDR improve the Safety of a vessel ?

No, not the VDR itself, but the information recorded and stored in the VDR could improve the Safety of a vessel.

We have seen only the very first steps, and experienced only a very few features to date. There are a lot more benefits coming with new VDRs accordingly with the forthcoming Directives, and all this could be used to improve quality and safety for the shipowner and the ship handling.

And as important - The possibility to retrieve the information at your desktop - you can use this most important and valuable information to improve the quality within your own fleet, provided that you have invested in a multimedia equipped pc.

The technology is here, and it works.

Now it's up to ourselves to use all these options to improve safety on board our vessels.

Thank you for your kind attention.

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References

IMO A.861(20)
EU Council Directive COM(98) 71 final

